

Appln SN: 09/921,992  
Response to Office Action mailed 01/16/2004  
Arry Docket: REN-00-084-US

**Remarks**

The present Office Action of 01/16/2004 has made final the restriction requirement of the Office Action mailed 3/21/2003. Applicants had previously elected with traverse, Group I claims 1-5 and 7-9 including SEQ ID NOs: 3 and 50.

Claims 6 and 10 have been withdrawn, as being directed to non-elected subject matter. Please cancel claims 1 and 3 without prejudice. Claims 2, 4, 5, 7, 8, and 9 are pending.

As a first comment, the applicants are appreciative of the Examiner's remarks that "Claims 2, 4-5, and 7-9 are deemed free from the prior art ..." (Office Action page 12). In view of the amendments and remarks provided herein, applicants respectfully submit that the claims are ready for allowance.

In the specification, three paragraphs were amended to remove the embedded hyperlinks and other forms of browser-executable code. The hyperlinks to the ChloroP program were replaced with a literature reference that describes that same computer program. The hyperlink to the Cyanobase database was replaced with the name and location of the company maintaining the database. The information provided by these references was contained within the web pages accessed via the removed hyperlinks. No new matter enters by way of these amendments.

In the drawings, Figure 5 has been corrected to change the font color to black in the electronic file. The black font version should provide improved print quality of the text. Figure 2 has been resubmitted. The Office Action stated that Figure 2 was missing. Figure 2 is a depiction of the chemical structure of the diacetate of 2-methylbut-2-ene-1,4-diol described as the specification (specification page 99, line 15). No new matter is introduced by these resubmissions.

Claims 2, 4, 8, and 9 have been amended. Support for these amendments can be found in the original specification. Claims 4 and 9 were amended to remove non-elected subject matter and comply with the final restriction requirement. Claim 2 was made an independent claim; claim 1 was canceled. Claim 8 was amended to recite that the claimed seeds comprise the gene construct that was introduced into the parent plant.

Full support for amendments is found in the specification, and is set forth in the discussion below. No new matter is introduced by these amendments.

Appln SN: 09/921,992  
Response to Office Action mailed 01/16/2004  
Atty Docker: REN-00-084-US

### I. Claim Objections

Claims 1, 3, 4, and 9 are objected to for allegedly reading on non-elected inventions. Claims 1 and 3 are canceled without prejudice, and therefore all objections to these claims are moot. Claims 4 and 9 are amended to include only the elected sequences, SEQ ID NOs: 3 and 50.

Claim 9 is objected to for improper grammar and for reciting an improper article. Claim 9 has been amended according to the suggestions set forth in the Office Action. The objection to claims 4 and 9 should, therefore, be withdrawn.

### II. Claims rejected under 35 U.S.C. § 112, Second Paragraph

Claim 2 is rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office Action states that the recitation of a "peptide-encoding sequence" is unclear. The applicants have amended the claim to delete the phrase "-encoding sequence", and substitute the language suggested by the Examiner.

Applicants respectfully submit that the 35 U.S.C. §112, second paragraph rejections relating to indefiniteness should be withdrawn.

### III. 35 U.S.C. §112, First Paragraph, Written Description

Claim 3 is rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claim 3 has been canceled without prejudice, and therefore the rejection under 35 U.S.C. §112, first paragraph, is moot.

### IV. 35 U.S.C. §112, First Paragraph, Enablement

Claims 1-5 and 7-9 are rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the enablement requirement. The Office Action states that the

Appn SN: 09/921,992  
Response to Office Action mailed 01/16/2004  
Atty Docket: REN-00-084-US

applicants allegedly fail to disclose how one skilled in the art would use a plant transformed with a gcpE nucleic acid.

Additionally, the Office Action states that the applicants have not shown that gcpE alone can regulate or control isoprenoid biosynthesis by itself, and that given the lack of guidance and the unpredictability of what proteins are required, excessive experimentation would be required to make and use the claimed invention. The applicants respectfully disagree.

The applicants assert that the specification is replete with description on how one would use plants transformed with gcpE. As an illustration, Examples 10, 11, and 12 describe *Arabidopsis*, *Brassica napus*, and soybean plants transformed with various DNA constructs (starting at page 103 of the specification). The DNA constructs include both single gene constructs and multiple gene constructs comprising gcpE alone and with other tocopherol biosynthetic genes. The examples disclose promoters and plastid target peptides useful in expressing the target genes. The examples further disclose methods for generating plants from these transformations, analyzing the transformants for altered tocopherol levels and selecting plants to cross for ultimately generating plants with desired tocopherol levels.

Applicants assert that it is well established that routine experimentation may be warranted to determine whether use of a thing or a method is or is not within the scope of a claim, and does not negate the patentability of the claim (*In re Wands*, 858F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988)). The applicants have claimed as their invention a method of producing a transgenic plant having seed with an altered isoprenoid compound level. Applicants assert that they have provided sufficient guidance that one of skill in the art could use this invention without undue experimentation.

Additionally, the Office action has stated the given the teachings of the state-of-the-art, applicants' hybridization claim is drawn to a multitude of sequences that would not be involved in isoprenoid biosynthesis. Applicants have canceled claim 3 without prejudice, and therefore the rejection under 35 U.S.C. §112, first paragraph rejections relating to enablement is moot.

Applicants respectfully submit that the 35 U.S.C. §112, first paragraph rejections relating to enablement are unfounded and should be withdrawn.

Appln SN: 09/921,992  
Response to Office Action mailed 01/16/2004  
Atty Docket: REN-00-084-US

#### V. Claims rejected under 35 U.S.C. §102

Claims 1 and 3 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Baker *et al.* (1993, NCBI Accession Number X64451). Applicants have canceled claims 1 and 3 without prejudice, therefore the rejection under 35 U.S.C. §102(b) is moot.

#### VI. Claims rejected under 35 U.S.C. §101

Claim 8 is rejected under 35 U.S.C. §101 because the claimed invention is allegedly directed to non-statutory subject matter. The Office Action states that claim 8 is drawn to a seed of the transformed plant, which may include seeds not having the transgene. Claim 8 has been amended to recite that the seed comprises the transgene that was introduced into the parent plant. This amendment clearly distinguishes the claimed seed from seed that would occur in nature. No new matter is introduced by this amendment.

Applicants respectfully submit that the rejection under 35 U.S.C. §101 should be withdrawn.

Each of the above pending claims are believed to be in condition for allowance. Applicants respectfully request that the Office Action's rejections and objections be withdrawn and a timely Notice of Allowance be issued in this case.

If the Examiner believes that contacting the undersigned would facilitate concluding the prosecution of this application, he is invited to call at the number indicated below.

Respectfully submitted,



Lois K. Ruszala, Reg. No. 39,074  
Thomas E. Omholt, Reg. No. 37,052

Renessen LLC  
Legal Dept - Intellectual Property  
3000 Lakeside Drive - Suite 300-South  
Bannockburn, IL 60015  
Phone: 847-457-5000  
Fax: 847-457-5174